

## MONTHLY NOTICES

OF THE

## ROYAL ASTRONOMICAL SOCIETY.

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No. 3

EDWIN DUNKIN, F.R.S., President, in the Chair.

J. E. Evans, Principal of the Training College, Dindigal, Madras;

George Ford, B.A., Christ's College, Cambridge;

Jacob Gerhard Lohse, 68, Falsgrave Road, Scarborough;

William Irving Page, F.R.G.S., Wimbledon Common;

Captain George Parker, F.R.G.S., A.I.C.E., M.R.A.S., H.M.'s Indian Marine, Kurrachee, India;

Julien Tripplin, Belle Vue, Heathfield Gardens, Chiswick, W.;

E. L. Trouvelot, Observatoire d'Astronomie Physique, Meudon, Seine-et-Oise, France;

were balloted for and duly elected Fellows of the Society.

*Observations of the Moon made at the Radcliffe Observatory, Oxford, during the year 1885, and a Comparison of the Results with the Tabular Places from Hansen's Lunar Tables.* By E. J. Stone, M.A., F.R.S.

The present paper contains the Right Ascensions and North Polar Distances of the Moon as deduced from the observations made at the Radcliffe Observatory during the year 1885. These results are here compared with those deduced from Hansen's Lunar Tables on two suppositions:—

- (1) That the mean times, found in the usual way from the sidereal times at mean noon given in the *Nautical Almanac*, were *not* changed in 1864.
- (2) That the mean times *were* changed in 1864, in accordance with the views which I have explained in papers already communicated to the Society.

For facilities for an accurate comparison between Hansen's Lunar Tables and observations we are now indebted to the places published in the *Connaissance des Temps*.

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TABLE I.  
*Radcliffe Observations of the Moon, 1885.*

Corr. to be subtracted from M.T. computed directly from Sid. Time at Mean Noon. from N.A.	Day, 1885.	Observed R.A.	Secs. of Hansen's R.A.	Hans.—Obs.		Observed N.P.D.	Secs. of Hansen's N.P.D.	Hans.—Obs.		Corr. due to Error in Time.	Corr. for Error in Time.
				Uncorrected for Error	Corrected for Error			Uncorrected for Error	Corrected for Error		
31.28	F.B.	Jan.	12 22 57.55	58.79	+ 1.24	- 8	+ 0.18	92° 41' 41.78	44" 98	+ 3.20	- 5.27
31.28	R.		14 2 28.06	28.97	+ 0.91	- 1.04	- 0.13	100 18 24.99	27.67	+ 2.68	- 4.23
31.34	R.	Jan. 23	1 54 17.27	17.95	+ 0.68	- 1.15	- 0.47	80 25 22.40	20.37	- 2.03	+ 4.83
31.35	F.B.	24	...	...	...	...	...	76 51 21.77	19.65	- 2.12	+ 4.09
31.39	W.	Feb. 4	13 42 27.27	28.45	+ 1.18	- 1.07	+ 0.10	98 38 24.84	29.06	+ 4.22	- 4.46
31.40	R.	5	14 32 53.29	54.19	+ 0.90	- 1.06	- 0.16	102 0 01.22	11.91	+ 1.69	- 0.39
31.46	F.B.	Feb. 21	3 30 54.23	54.86	+ 0.63	- 1.23	- 0.60	75 1 13.72	12.17	- 1.55	+ 3.34
31.47	R.	23	5 32 34.92	35.37	+ 0.45	- 1.31	- 0.86	71 48 56.41	54.87	- 1.54	+ 0.56
31.47	W.	24	6 35 28.49	28.95	+ 0.46	- 1.32	- 0.86	72 0 54.31	56.87	+ 2.56	- 1.06
31.48	R.	27	9 39 32.29	32.83	+ 0.54	- 1.23	- 0.69	79 37 31.72	36.07	+ 4.35	- 4.91
31.51	F.B.	Mar. 6	15 52 47.29	48.57	+ 1.28	- 1.09	+ 0.19	105 50 33.05	35.34	+ 2.29	- 2.51
31.58	R.	Mar. 23	6 15 10.05	50.28	+ 0.27	- 1.30	- 1.03	71 53 6.41	8.23	+ 1.82	- 0.54
31.60	R.	27	10 13 19.95	20.50	+ 0.55	- 1.18	- 0.63	82 0 38.58	42.16	+ 3.58	- 5.17
31.60	F.B.	28	11 8 17.72	18.40	+ 0.68	- 1.15	- 0.47	86 14 17.33	19.03	+ 1.70	- 5.53

Corr. to be sub- tracted from M.T. computed directly from Sid. Time at Mean Noon. from N.A.	Day, 1885.	Observed R.A.	Secs. of Hansen's R.A.	Hans.—Obs.			Hans.—Obs.			Hans.—Obs.		
				Uncorrected	Corrected due to Error in Time.	Observed N.P.D.	Uncorrected	Corrected due to Error in Time.	Observed N.P.D.	Uncorrected	Corrected due to Error in Time.	Observed N.P.D.
31.61	R.	Mar. 30	12 54 27.7	28.60	+0.89	-1.11	-0.22	94 51 39.57	43.90	+4.33	-5.25	-0.92
31.62	F.B.	Apr. 3	16 22 7.82	9.15	+1.33	-1.10	+0.23	106 49 33.28	36.34	+3.06	-1.96	+1.10
31.70	F.B.	Apr. 22	8 58 58.77	59.67	+0.90	-1.22	-0.32	77 6 36.53	39.12	+2.59	-4.14	-1.55
31.71	F.B.	25	11 42 46.40	47.33	+0.93	-1.11	-0.18	89 0 25.26	30.21	+4.95	-5.50	-0.55
31.72	R.	27	13 26 1.22	2.07	+0.85	-0.11	-0.25	97 17 18.44	22.55	+4.11	-4.92	-0.81
31.72	W.	28	14 17 23.76	24.72	+0.96	-1.11	-0.14	100 53 26.56	29.60	+3.04	-4.26	-1.22
31.73	F.B.	29	15 9 0.14	1.39	+1.25	-1.11	+0.15	103 54 12.71	16.30	+3.59	-3.42	+0.17
31.74	R.	May 1	16 52 58.89	59.91	+1.02	-1.11	-0.03	107 40 20.70	24.08	+3.38	-1.34	+2.04
31.82	F.B.	May 23	12 18 49.32	50.24	+0.92	-0.09	-0.17	91 50 31.91	35.72	+4.11	-5.42	-1.31
31.84	F.B.	27	15 42 19.67	21.03	+1.36	-0.11	+0.26	105 29 1.61	3.84	+2.23	-2.84	-1.90
31.84	W.	28	16 34 4.20	5.50	+1.30	-1.11	+0.19	107 17 33.11	35.57	+2.46	-1.79	+0.67
31.85	R.	29	17 26 2.29	3.36	+1.07	-1.11	-0.03	108 15 38.53	39.41	+0.88	-0.68	+0.20
31.86	W.	June 1	19 59 47.59	48.81	+1.22	-0.01	+0.14	101 0 53.39	53.90	+0.51	+2.51	+3.02
31.86	F.B.	2	20 49 33.15	34.63	+1.48	-1.01	+0.42	103 42 42.59	40.03	-2.56	+3.39	+0.83
31.96	R.	June 26	18 0 42.18	43.23	+1.01	-1.11	-0.03	108 27 22.15	25.15	-0.57	+0.02	-0.55
31.96	F.B.	27	18 52 13.33	14.60	+1.29	-0.11	+0.22	108 1 15.31	12.61	-2.70	+1.11	-1.59
31.98	W.	July 1	22 11 14.97	16.23	+1.26	-0.04	+0.22	98 45 15.72	12.83	-2.89	+4.51	+1.62

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Corr. to be subtracted from M.T. computed directly from Sid. Time at Obs. Mean Noon, from N.A.	Day, 1885,	Observed R.A.	Hans.—Obs.		Corr. due to Error in Time.	Hans.—Obs.		Corr. due to Error in Time.	Hans.—Obs.		Corr. due to Error in Time.	
			Secs. of Hansen's R.A.	Unorrected for Error in Time.		Secs. of Hansen's R.A.	Unorrected for Error in Time.		Secs. of Hansen's N.P.D.	Unorrected for Error in Time.		
32°06	R.	July 22	16 52 30.81	31.95	+ 1.14	11.1	+ 0.03	107 34 12.86	13.71	+ 0.85	— 1.52	— 0.67
32°07	F.B.	23	17 44 2.67	3.90	+ 1.23	11.1	+ 0.12	108 19 9.57	10.92	+ 1.35	— 0.41	+ 0.94
32°07	R.	24	18 35 33.36	34.18	+ 0.82	11.1	— 0.29	108 12 30.66	29.75	— 0.91	+ 0.70	— 0.21
32°08	F.B.	25	19 26 42.98	44.24	+ 1.26	11.1	+ 0.10	107 14 57.54	55.17	— 2.37	+ 1.77	— 0.60
32°08	F.B.	26	20 17 16.68	17.77	+ 1.09	8.0	+ 0.00	105 29 31.33	29.86	— 1.47	+ 2.76	+ 1.29
32°18	W.	Aug. 19	17 26 18.49	19.79	+ 1.30	— 1.12	+ 0.18	108 0 49.10	50.71	19.1	+ 0.84	+ 0.77
32°18	W.	21	19 9 7.97	9.06	+ 1.09	10.1	— 0.0	107 34 59.41	59.18	— 0.23	+ 1.38	+ 1.15
32°19	F.B.	22	19 59 55.80	56.9	+ 1.11	11.1	— 0.02	106 7 28.04	25.71	— 2.33	+ 2.40	+ 0.07
32°20	W.	24	21 39 44.93	46.0	+ 0.91	10.1	+ 0.0	101 2 58.81	54.20	— 4.61	+ 4.10	— 0.51
32°20	F.B.	25	22 28 54.94	56.52	+ 1.58	10.1	+ 0.52	97 38 56.83	52.39	— 4.44	+ 4.71	+ 0.27
32°30	R.	Sept. 18	19 40 40.96	41.99	+ 1.03	— 1.1	— 0.0	106 43 13.90	11.82	— 2.03	+ 2.02	— 0.06
32°30	F.B.	19	20 31 2.19	3.20	+ 1.01	10.1	— 0.0	104 47 62.35	59.85	— 2.50	+ 2.98	+ 0.48
32°31	R.	21	22 10 16.92	17.72	+ 0.80	10.1	+ 0.07	98 58 31.26	27.76	— 3.50	+ 4.52	+ 1.22
32°32	R.	25	1 31 56.86	58.00	+ 1.14	11.1	+ 1.5	83 4 41.12	36.48	— 4.64	+ 5.18	+ 0.54
32°34	W.	30	6 21 13.30	14.41	+ 1.11	— 1.33	— 0.22	71 50 33.78	34.74	+ 0.96	— 0.41	+ 0.55

## Mean of Errors without regard to sign

## Mean Errors for the Year ...

*Q<sub>1</sub> servers :- W.* Mr. W. Wickham : R., Mr. W. H. Robinson : F.B., Mr. F. A. Bellamy.

TABLE II.

*Radcliffe Observations of the Moon, 1885.*

*Errors of Longitude and Ecliptic Polar Distance. Corrected and Uncorrected for Error in Mean Time.*

(Hansen—Observed.)

Day, 1885.	Errors of Longitude.		Errors of E.N.P.D.	
	Corrected.	Uncorrected.	Corrected.	Uncorrected.
Jan. 6	+ 1"66	+ 18"33	- 2"97	- 4"41
8	- 2"34	+ 13"55	- 0"80	- 2"10
Jan. 23	- 7"50	+ 10"15	+ 0"18	+ 1"63
Feb. 4	+ 1"38	+ 17"87	- 0"95	- 2"36
5	- 2"92	+ 13"08	- 1"34	- 2"54
Feb. 21	- 8"88	+ 9"25	- 0"38	+ 0"72
23	- 12"24	+ 6"51	- 1"57	- 1"23
24	- 12"80	+ 6"73	+ 2"26	+ 2"15
27	- 9"82	+ 8"97	+ 2"79	+ 1"52
Mar. 6	+ 2"64	+ 18"58	- 0"79	- 1"66
Mar. 23	- 14"71	+ 3"92	+ 1"69	+ 1"71
27	- 9"33	+ 8"93	+ 1"85	+ 0"43
28	- 7"98	+ 10"05	- 0"80	- 2"38
30	- 3"39	+ 13"95	+ 0"42	- 1"15
Apr. 3	+ 3"45	+ 19"40	+ 0"54	- 0"11
Apr. 22	- 4"94	+ 13"39	- 0"18	- 1"20
25	- 2"70	+ 14"79	+ 0"57	- 1"00
27	- 3"76	+ 13"27	+ 0"63	- 0"87
28	- 2"35	+ 14"37	- 0"48	- 1"76
29	+ 2"15	+ 18"55	- 0"43	- 1"45
May 1	- 1"04	+ 14"91	+ 2"18	+ 1"67
May 23	- 2"86	+ 14"29	- 0"19	- 1"70
27	+ 3"53	+ 19"71	- 1"44	- 2"27
28	+ 2"80	+ 18"82	+ 0"26	- 0"31
29	- 0"56	+ 15"30	+ 0"23	- 0"03
June 1	+ 1"38	+ 17"18	+ 3"36	+ 4"01
2	+ 5"68	+ 21"52	+ 2"45	+ 3"37

Day, 1885.	Errors of Longitude.		Errors of E.N.P.D.	
	Corrected.	Uncorrected.	Corrected.	Uncorrected.
June 26	- 0.86	+ 14.99	- 0.55	- 0.57
27	+ 2.85	+ 18.64	- 1.34	- 1.04
July 1	+ 2.47	+ 18.51	+ 2.67	+ 3.94
July 22	+ 0.35	+ 16.36	- 0.72	- 1.05
23	+ 1.74	+ 17.64	+ 0.89	+ 0.86
24	- 4.12	+ 11.76	- 0.47	- 0.18
25	+ 2.36	+ 18.27	- 0.26	+ 0.29
26	- 0.15	+ 15.72	+ 1.29	+ 2.13
Aug. 19	+ 2.62	+ 18.69	+ 0.62	+ 0.52
21	- 0.28	+ 15.57	+ 1.13	+ 1.64
22	+ 0.27	+ 16.20	+ 0.13	+ 0.91
24	+ 0.31	+ 16.56	- 0.43	+ 0.82
25	+ 7.10	+ 23.52	+ 3.08	+ 4.48
Sept. 18	- 0.98	+ 14.98	- 0.23	+ 0.44
19	- 1.25	+ 14.85	+ 0.18	+ 1.17
21	- 4.11	+ 12.34	- 0.46	+ 0.92
25	- 0.34	+ 17.52	+ 0.45	+ 1.91
30	- 3.13	+ 15.92	+ 0.67	+ 0.36
Oct. 15	- 2.43	+ 13.57	+ 0.80	+ 1.40
16	- 1.57	+ 14.42	- 2.98	- 2.12
27	- 0.71	+ 18.57	+ 0.38	+ 0.20
Nov. 16	- 1.36	+ 15.36	- 1.00	+ 0.48
17	- 0.85	+ 16.31	- 0.31	+ 1.23
18	- 2.12	+ 15.50	+ 1.53	+ 2.98
20	- 4.27	+ 14.60	- 0.70	+ 0.43
Dec. 15	- 4.20	+ 12.84	- 0.11	+ 1.33
22	- 4.21	+ 16.46	+ 0.92	+ 0.05
23	- 0.89	+ 19.60	- 1.28	- 2.52
27	- 4.02	+ 14.44	- 1.73	- 3.31
29	+ 0.46	+ 18.10	- 1.75	- 2.92
Mean of Errors with- } 3.459		15.144	1.066	1.556
Mean Errors for Year - 1873		+ 15.144	...	...

TABLE III.

Observations of the Moon, 1862 to 1885.

Mean Errors of Longitude. Uncorrected and Corrected for Error in Mean Time.

Year.	Errors of Longitude. (Hansen—Observed.)		Year.	Errors of Longitude. (Hansen—Observed.)	
	Uncorrected.	Corrected.		Uncorrected.	Corrected.
1862 Greenwich	-2°829	-2°829	1874 Greenwich	+ 9°294	+ 0°561
1863 ,	-1°606	-1°606	1875 ,	+ 9°867	+ 0°365
1864 ,	+0°121	-0°814	1876 ,	+ 9°800	-0°509
1865 ,	+1°271	-0°220	1877 ,	+ 9°234	-1°898
1866 ,	+2°142	-0°217	1878 ,	+ 8°219	-3°603
1867 ,	+3°480	+0°357	1879 ,	+ 9°631	-3°124
1868 ,	+4°117	+0°280	1880 ,	+ 10°265	-3°245
1869 ,	+4°277	-0°352	1881 ,	+ 10°622	-3°791
1870 ,	+4°828	-0°657	1882 Radcliffe	+ 12°927	-2°508
1871 ,	+6°955	+0°435	1883 ,	+ 14°615	-1°547
1872 ,	+7°309	+0°097	1884 ,	+ 14°645	-1°907
1873 ,	+8°239	+0°200	1885 ,	+ 15°144	-1°873

Radcliffe Observatory, Oxford,  
1886, January 6.

## On Photographs of a new Nebula in the Pleiades, and of Saturn.

(Letter to the President, from MM. Paul and Prosper Henry.)

Nous avons reconnu à l'aide de la photographie, l'existence d'une nébuleuse nouvelle dans les *Pleiades*. Cette nébuleuse est voisine de l'étoile Maïa, qu'elle contourne, en partie, et d'où elle paraît s'échapper.

Elle affecte une forme spirale bien caractérisée et son étendue est de 2' ou 3' environ.

Il nous a été possible d'obtenir l'image de la nébuleuse sur 3 épreuves différentes : le 16 Novembre et les 8 et 9 Décembre derniers.

Nous ajouterons que, jusqu'à présent, nous n'avons pu l'apercevoir dans nos télescopes.

Nous avons l'honneur de vous adresser, Monsieur le Président, une reproduction agrandie, du négatif original, montrant la nébuleuse avec les étoiles environnantes.

Nous nous sommes permis d'y joindre quelques images de *Saturne* obtenues dernièrement.

Observatoire de Paris,  
le 5 Janvier, 1886.

\* Here change in the unit of time took place.